UNITED
NATIONS

ST

Secretariat

Distr.
GENERAL

ST/SG/AC.10/C.3/32
26 July 1999

Original: ENGLISH

COMMITTEE OF EXPERTS ON THE TRANSPORT
OF DANGEROUS GOODS

Sub-Committee of Experts on the
Transport of Dangerous Goods

REPORT OF THE SUB-COMMITTEE OF EXPERTS ON ITS SIXTEENTH SESSION

(Geneva, 5-14 July 1999)

CONTENTS

	Paragraphs
ATTENDANCE	1-6
ADMINISTRATIVE MATTERS	7-9
ADOPTION OF THE AGENDA	10 and 11
DEVELOPMENT OF PROVISIONS FOR THE TRANSPORT OF GASES	12-27
TRANSPORT IN BULK IN PORTABLE TANKS AND FREIGHT CONTAINERS	28 and 29
TRANSPORT OF DANGEROUS GOODS DOCUMENTATION	30-37

GE.99-22724

CONTENTS (cont'd)

		Paragraphs
MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS		38-115
(a)	**Listing and classification**	38-53
(b)	**Lithium batteries**	54 and 55
(c)	**Chapter 3.4 (Limited quantities)**	56-64
(d)	**Packagings**	65-81
(e)	**Tanks**	(see paras 28-29)
(f)	**Infectious substances**	82-85
(g)	**Toxic by inhalation substances**	86-92
(h)	**Segregation**	93-96
(i)	**Miscellaneous**	97-101
(j)	**Organic peroxides/Self-reactive substances**	102-104
(k)	**Explosives**	105-115
DRAFT AMENDMENTS TO THE MANUAL OF TESTS AND CRITERIA		116-120
GLOBAL HARMONIZATION OF SYSTEMS OF CLASSIFICATION AND LABELLING OF CHEMICALS		121-141
OTHER BUSINESS		142-145
ADOPTION OF THE REPORT		146

Annexes

Annex 1: **Report of the Working Group on Gas Receptacles and Multiple Elements Gas Containers (MEGC's) ST/SG/AC.10/C.3/32/Add.1**

Annex 2: **Draft amendments to the Model Regulations on the Transport of Dangerous Goods ST/SG/AC.10/C.3/32/Add.2**

* * * * *

REPORT

ATTENDANCE

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its sixteenth session from 5 to 14 July 1999 with Mr. S. Benassai (Italy) as Chairman and Mr. F. Wybenga (United States of America) as Vice-Chairman.

2. Experts from the following countries took part in the session: Australia; Belgium; Brazil; Canada; China, Czech Republic; France; Germany; Italy; Japan, Mexico; Netherlands; Norway; Poland; Russian Federation; South Africa; Spain; Sweden; United Kingdom; United States of America.

3. Under rule 72 of the rules of procedure of the Economic and Social Council, observers from the following countries also took part: Austria; Bahamas; Bulgaria; Finland; Nigeria, Switzerland and Tunisia.

4. Representatives of the following specialized agencies were present: International Civil Aviation Organization (ICAO); International Maritime Organization (IMO) and World Health Organization (WHO).

5. The following intergovernmental organizations were represented: Organization for Economic Co-operation and Development (OECD) and Intergovernmental Organization for International Carriage by Rail (OTIF).

6. Representatives of the following non-governmental organizations took part in the discussion of items of concern to their organizations: European Liquefied Petroleum Gas Association (AEGPL); International Association of the Soap, Detergent and Maintenance Products Industry (AISE); European Chemical Industry Council (CEFIC); European Confederation of Paint, Printing Ink and Artists' Colours Manufacturers' Associations (CEPE); Compressed Gas Association (CGA); European Cylinder Makers Association (ECMA); European Industrial Gases Association (EIGA); Federation of European Aerosol Associations (FEA); Hazardous Materials Advisory Council (HMAC); International Air Transport Association (IATA); International Confederation of Container Reconditioners (ICCR); International Confederation of Drums Manufacturers (ICDM); International Confederation of Plastics Packaging Manufacturers (ICPP); International Council of Intermediate Bulk Container Associations (ICIBCA); International Electrotechnical Commission (IEC); International Fibre Drum Institute (IFDI); International Organization for Standardization (ISO); International Tank Container Organization/Tank Container Association (ITCO/TCA); International Road Transport Union (IRU); International Union of Railways (IUC) and European Secretariat of Manufacturers of Light Metal Packagings (SEFEL).

ADMINISTRATIVE MATTERS

Composition

7. The Sub-Committee noted that, under Council decision 1999/217, dated 6 May 1999, the Czech Republic had become the twenty-third member of the Committee.

Publication of the eleventh revised edition of the United Nations Recommendations on the Transport of Dangerous Goods

8. The Sub-Committee noted with satisfaction that the eleventh revised edition of the United Nations Recommendations was already available in English.

Report of the Secretary-General on the work of the Committee of Experts on the Transport of Dangerous Goods (document E/1999/43)

9. The Sub-Committee noted that this report, and the two draft resolutions drawn up by the Committee at its last session (see ST/SG/AC.10/25), would be discussed by the Council on 23 July 1999.

ADOPTION OF THE AGENDA (ST/SG/AC.10/C.3/31 and -/Add.1 and -/Add.2)

10. The Sub-Committee adopted the provisional agenda prepared by the secretariat after amending it to include late submissions (see informal documents INF.1 and INF.2).

11. The expert from South Africa withdrew her document ST/SG/AC.10/1998/27 (agenda item 5 (d)) and the expert from Argentina, who had excused himself from attending the session, requested that the documents he had prepared should be placed on the agenda for the next session (ST/SG/AC.10/1998/3, ST/SG/AC.10/C.3/1999/3 and, if necessary, ST/SG/AC.10/C.3/R.661 and ST/SG/AC.10/C.3/R.707).

DEVELOPMENT OF PROVISIONS FOR THE TRANSPORT OF GASES

Informal document: INF.22 (Secretariat)

12. The Sub-Committee accepted the application of the Compressed Gas Association and the European Cylinder Makers Association for consultative status.

Documents: ST/SG/AC.10/C.3/30/Add.1 (Secretariat)
ST/SG/AC.10/C.3/1999/24 (EIGA)
ST/SG/AC.10/C.3/1999/35 (Canada)
ST/SG/AC.10/C.3/1999/50 (ISO)

Informal document: INF.11 (United States of America)
INF.25 (Germany)

13. The representative of EIGA submitted a full proposal comprising a revised text for multiple-element gas containers (MEGCs) and new provisions in Part 4 and Chapter 6.2 for gas receptacles. For EIGA the regulations should be limited to setting out essential safety

requirements, while the standards and codes of practice were instruments permitting compliance with the regulations by including these essential requirements and adding detailed information to them.

14. The expert from Germany (INF.25) informed the Sub-Committee of the principles adopted by the RID/ADR/ADN Joint Meeting in respect of reference to standards, namely, that the regulations must contain the basic requirements and that reference was made to dated standards - as a possible means of complying with the regulation - only once it had been ascertained that such standards would meet the essential requirements.

15. The expert from the United States of America considered that in order to ensure harmonization in international transport it would be preferable to refer to acceptable ISO standards and make them mandatory. In his opinion, the essential requirements according to EIGA were not sufficiently technically detailed and he would be unable to accept that gas receptacles constructed according to these requirements and standards which had not been approved by the Committee of Experts could be used in international transport. "Alternative arrangements" to take account of the rapid evolution of technology, like those for portable tanks, would, however, be acceptable. He also considered that work on gas receptacles would require several years and that it would be advisable to give priority to work on receptacles for which ISO standards were already available, and in particular steel cylinders.

16. The majority of experts were of the opinion that the United Nations Model Regulations should establish safety requirements and that standards could only be used if the Model Regulations made them mandatory or referred to them as acceptable standards Opinions were divided between the approach recommended by EIGA (essential requirements and reference to acceptable standards) and that recommended by the United States of America (mandatory application of an ISO standard or of more detailed technical requirements).

17. The Sub-Committee entrusted these questions to a working group which met from 5 to 8 July with Mr. H. Puype (EIGA) as Chairman, with the mandate of considering documents ST/SG/AC.10/C.3/1999/24, ST/SG/AC.10/C.3/1999/50 and INF.11.

Report of the Working Group on Gas Receptacles and Multiple Element Gas Containers (MEGCs)

Informal document: INF.38

18. The Sub-Committee considered the report of the Working Group reproduced in annex 1 (ST/SG/AC.10/C.3/32/Add.1) and welcomed the progress made which made it possible to envisage concluding the work at the close of the present biennium.

19. In paragraph 6 several experts were opposed to the proposal to introduce a definition of "highly toxic gas" since this definition was not necessarily compatible with the overall work of harmonization and was liable to introduce a new criterion of toxicity on inhalation, which had not been accepted for liquids. This proposal should therefore be the subject of a specific written proposal.

20. In paragraph 10, several experts said that pressure relief devices were permitted in the IMDG Code and RID/ADR for pressure receptacles containing very toxic gases and therefore entered a reservation concerning the working group's proposal.

21. The expert from Belgium expressed surprise at the proposal by the United States of America (paragraph 17) to extend the period between inspections from 3 to 5 years for corrosive toxic gases since they were particularly dangerous. The expert from the United States of America indicated that this frequency of inspection had been used safely for many years and he would provide additional supporting data at the next session.

22. The experts from Germany and Belgium were not in favour of paragraph 23, considering that it should be possible to use several different standards provided that the essential requirements were met. Several experts considered on the contrary that paragraphs 22 and 23 reflected the basic objective of the work which was to permit the mutual acceptance of gas receptacles in international multimodal transport, which would only be possible if the standards were approved by the Committee of Experts.

23. In paragraph 38 some experts considered that the introduction of an impact test in standard ISO 1496-3 should not call in question equipment which had undergone impact tests in accordance with the standards already accepted and quoted in Chapter 6.7 (e.g. see 6.7.2.19.1). The expert from the United States of America said that the work on standard ISO 1496-3 took into account test conditions in the currently referenced standards. He would in due course submit a proposal for the amendment of Chapter 6.7.

24. The Sub-Committee decided that the Working Group would be reconvened during the next session for consideration of the proposals contained in its report (see ST/SG/AC.10/C.3/32/Add.1) and of any related new document.

Leakproofness test for aerosols and small receptacles for gases

Document: ST/SG/AC.10/C.3/1999/23 (FEA)

25. Generally speaking, the Sub-Committee was not opposed to the United Nations Model Regulations proposing an alternative method to the water bath for aerosols but the majority of experts considered that it was not appropriate, in the context of international transport, to refer to the competent authority for test approval. FEA was therefore invited to submit a test proposal which could be internationally recognized.

Amendments to special provision 63

Documents: ST/SG/AC.10/C.3/1999/26 (United Kingdom)
ST/SG/AC.10/C.3/R.590 (United States of America)

26. Several experts supported the proposal by the United Kingdom, but it was pointed out that the consequences for air transport were not fully taken into account, and according to RID/ADR, there were numerous instances of the classification of aerosols which were also not taken into account in the United Nations Model Regulations.

27. In view of the remarks made by various experts and since the matter was to be studied by ICAO at the forthcoming session of its Dangerous Goods Panel, the expert from the United Kingdom said that he would prepare a new proposal for the next session.

TRANSPORT IN BULK IN PORTABLE TANKS AND FREIGHT CONTAINERS

Informal document: INF.10 (United States of America)

28. The proposals concerning provisions for carriage in tanks of substances assigned to UN Nos. 2740, 1556 and 2994, and the addition of special provisions TP 30 to UN Nos. 2531 and 2579 and TP 31 to UN Nos. 1381, 1422, 1428 and 2257 were adopted (see annex 2) in accordance with the decisions made by IMO.

Transport of solid substances in tanks and containers

29. The Sub-Committee noted that the expert from Germany was preparing proposals on the subject for the December 1999 session.

TRANSPORT OF DANGEROUS GOODS DOCUMENTATION

Documents: ST/SG/AC.10/C.3/1997/58 (CEPE)
ST/SG/AC.10/C.3/1998/54 (CEPE)
ST/SG/AC.10/C.3/1998/20 (United Kingdom)
ST/SG/AC.10/C.3/1998/36 (FIATA)
ST/SG/AC.10/C.3/1999/37 (CEPE)

30. The Sub-Committee noted that CEPE was working on the subject and was intending to prepare a proposal for the next session.

Document: ST/SG/AC.10/C.3/1999/14 (ICAO)

31. The proposal to amend paragraph 5.4.1.1.3 concerning documentation relating to the carriage of waste was adopted (see annex 2).

Documents: ST/SG/AC.10/1998/33 (Canada)
ST/SG/AC.10/C.3/1999/39 (Canada)

32. The proposal that the subsidiary risks should be reflected in the transport document was adopted in principle. CEPE should take this into account in the consolidated proposal which it was intending to submit at the next session.

33. Several delegations expressed the hope that in the future the UN number should come first in the sequence of information given in the transport document, since in international transport between countries where different languages were used this number was initially more important than the proper shipping name.

34. The expert from the United States of America said that this question should be the subject of a written proposal since it would have important repercussions for industry.

35. The representatives of IATA and HMAC said that the modification of computer programmes would indeed have repercussions of note in terms of costs.

Document: ST/SG/AC.10/1998/42 (Austria)

Informal document: INF.13 (United States of America)

36. The proposal by Austria, as amended by the United States of America, was adopted (see annex 2).

Informal document: INF.26 (Netherlands)

37. In this informal document, the expert from the Netherlands raised the problem of the availability of information on substances being transported in case of an air accident. This will be discussed by the ICAO Dangerous Goods Panel and the report will be transmitted to the Sub-Committee at its next session.

MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Listing and classification

Hydrazine solutions (UN 2030)

Documents: ST/SG/AC.10/1998/8 (United States of America)
ST/SG/AC.10/C.3/1999/6 (Germany)
ST/SG/AC.10/C.3/1999/7 (United States of America)

38. The United States of America proposal to make provision for three packing groups for aqueous solutions and a flammable liquid label for solutions in Packing Group I with a flash point of 60.5° C or less was adopted. It was pointed out that 80% solutions falling within Packing Group I are commercially available. Since solutions with concentrations lower than 37% do not fall within Class 8, some solutions with concentrations greater than 37% may fall within Packing Group III.

New entries for sea transport

Document: ST/SG/AC.10/C.3/1999/1 (IMO)

Informal document: INF.16 (IMO)

39. The IMO proposal to reinstate entries for sea transport of wet animal or vegetable fibres, wet waste cotton, wet waste textiles and oil rags was adopted (see annex 2).

40. The Sub-Committee also adopted the proposal to add an entry for cargo transport units under fumigation; this entry will cover all modes of transport (see annex 2).

41. The proper shipping name in English ("cargo transport unit") nevertheless gave rise to some controversy, since that term is used only in the IMDG Code. The English term employed in the United Nations Model Regulations is "transport unit", but that has a different meaning in the ADR, where it refers only to a motor vehicle without an attached trailer or to a combination consisting of a motor vehicle and an attached trailer. The problem does not exist in French.

42. It was decided to retain the term used in the IMDG Code for the time being with the possibility of reverting to the matter at a later stage. The applicable special provisions should also be the subject of written proposals.

UN 3166, Engine, internal combustion

Document: ST/SG/AC.10/C.3/1999/10 (ICAO)

43. The proposal to amend the name for this entry was adopted (see annex 2).

UN 2680, Lithium hydroxide, monohydrate

Document: ST/SG/AC.10/C.3/1999/11 (ICAO)

44. The proposal to delete the word "monohydrate" from the name for this entry and to add under 3.1.2 a provision specifying that hydrates of substances may be transported under the proper shipping name for the solid substance was adopted (see annex 2).

Special provisions 119 and 291

Document: ST/SG/AC.10/C.3/1999/18 (United States of America)

45. The proposal to amend special provisions 119 and 291 was adopted (see annex 2).

Solvent free acetylene

Document: ST/SG/AC.10/C.3/1999/30 (Germany)

46. Several experts expressed their support for this proposed new entry. The Sub-Committee agreed to transmit the proposal to the working group on gases to determine the relevant packing instruction. The expert from Germany should also submit a detailed data sheet for the next session, when the proposal will be considered again.

Silicon tetrachloride, propyltrichlorosilane and generic chlorosilane entries

Document: ST/SG/AC.10/C.3/1999/44 (United States of America)

47. The expert from the United States of America proposed reclassifying silicon tetrachloride (UN 1818) and propyltrichlorosilane (UN 1816) in Division 6.1 rather than in Class 8, and creating two new n.o.s. entries, for toxic and corrosive chlorosilanes and for toxic, corrosive and flammable chlorosilanes, in Division 6.1.

48. Some experts considered that the primary hazard of these substances is their corrosiveness and that the lethal nature of exposure to them derives mainly from the corrosive effects on pulmonary tissues rather than from the toxicity of the products. Proposals to revise UN 1816 and UN 1818 had, in any event, already been made by the expert from the United States of America in the past and had been rejected.

49. Other experts considered on the other hand that, since the destruction of pulmonary tissues causes death in animals tested, these substances meet the criteria for Division 6.1 and that the application of the criteria logically implies classification in Division 6.1 with subsidiary risk 8.

50. Each proposal having been put to a vote, the Sub-Committee decided not to reclassify UN 1816 and UN 1818 but agreed to create two new n.o.s. entries in Division 6.1 (see annex 2).

51. The observer for Switzerland said that it was illogical for most of the chlorosilanes specifically listed by name to be classified as corrosive whereas those not listed by name would be classified in Division 6.1.

UN 1062, Methyl bromide

Document: ST/SG/AC.10/C.3/1999/48 (United States of America)

52. The proposal to state that methyl bromide classified as UN 1062 may contain up to 2% chloropicrin was adopted. It was therefore pointed out that mixtures of methyl bromide and chloropicrin classified under UN 1581 contain more than 2% chloropicrin (see annex 2).

Dangerous goods in machinery or apparatus

Document: ST/SG/AC.10/1998/7 (United States of America)

53. The proposal was submitted to a drafting committee and the Sub-Committee adopted new provisions for dangerous goods in machinery or apparatus (see annex 2).

Ammonium nitrate based emulsion

Documents: ST/SG/AC.10/1998/45 (France)
ST/SG/AC.10/C.3/1999/34 (Canada)
ST/SG/AC.10/C.3/1999/47 (Norway)

Informal document: INF.9 (OECD)

54. Several experts supported the principle that the conditions for the carriage of these emulsions should be defined, but it was pointed out that they were of very varied composition and that provision should be made for all possible cases of classification.

55. The Sub-Committee accepted the offer by FEM to convene an informal working group in Norway from 4 to 8 October 1999 to prepare a document for consideration at the next session. The group's mandate was:

(a) to determine appropriate classification criteria;

(b) to analyse the properties of the emulsions so as to determine test methods that could be used to classify them;

(c) to analyse the need for a new test method to better assess the explosive properties of such emulsions;

(d) to propose conditions for carriage, in particular packagings, tanks or IBCs, as appropriate for each type.

Ammonium nitrate fertilizer

Documents: ST/SG/AC.10/1998/32 (Canada)
ST/SG/AC.10/C.3/1999/40 (EFMA)

Informal documents: INF.15 (United States of America)
INF.20 (Canada)

56. After a general exchange of views on the documents submitted in which several experts supported the principle that the number of entries for ammonium nitrate fertilizer should be reduced, the Sub-Committee noted that EFMA was intending to prepare a new detailed proposal for the next session and that the experts from Canada and the United States of America also intended to prepare a joint proposal.

Lithium batteries

Document: ST/SG/AC.10/C.3/1999/8 (South Africa)

57. The Sub-Committee was of the view that the problem raised by South Africa could be resolved by an appropriate footnote in the alphabetical index (see annex 2).

Documents: ST/SG/AC.10/C.3/1999/29 (Japan)
ST/SG/AC.10/C.3/1999/36 (Canada)

Informal document: INF.21 (Canada)

58. After a general discussion of the documents, the Sub-Committee agreed that a new proposal should be prepared by a correspondence group and would be submitted as a joint proposal prepared by Canada and Japan for the next session. The group should

(a) review the risks involved in the transport of lithium batteries;

(b) study the relevance of current provisions according to the different sizes of lithium batteries;

(c) verify whether the current test procedure is clear and comprehensible;

(d) verify whether current test criteria are clear and comprehensible.

Limited quantities

Document: ST/SG/AC.10/1998/12 (CEFIC)

59. The experts were not in favour of the proposal to exclude specifically from paragraph 1.1.1.2 of the Model Regulations pharmaceuticals or animal health products packaged in a form intended or suitable for personal care or household use risk, as that question had already been settled, on a general basis, for all the dangerous goods in Chapter 3.4. However, the proposed addition to paragraph 3.4.8 was supported by the expert from the United States of America.

60. In view of the opinions expressed, the representative of CEFIC withdrew his proposal, but said that the problem of distribution of pharmaceuticals and animal health products was not adequately regulated by existing provisions.

Documents: ST/SG/AC.10/C.3/1999/16 (AISE)
ST/SG/AC.10/C.3/1999/41 (United Kingdom)

Informal documents: INF.5 (United Kingdom)
INF.8 (United States of America)

61. The Sub-Committee acknowledged that the current situation regarding regulations for the transport of dangerous goods packed in limited quantities is not satisfactory, as UN Recommendations are not usually reproduced in the modal regulations. The resulting lack of harmony with regard to labelling, marking, quantities permitted and documentation is harmful to the industry and to trade facilitation.

62. Opinions were sharply divided over documentation requirements; some experts felt that documentation was indispensable, being the only way for the shipper and emergency control or intervention services to know how dangerous goods are carried, while others felt that documentation need not be required especially for local distribution purposes.

63. With regard to marking, some experts supported the United Kingdom proposal to include the UN number, others felt that would not be a satisfactory solution in the many cases where several goods were grouped in the same package. Still others preferred a pictogram or diamond-shaped marking.

64. After a lengthy discussion, the expert from the United Kingdom agreed to submit a new proposal for the following session. The Chairman said that there was no point in reopening the general discussion at the following session and invited the delegations which had specific proposals to submit them in writing.

65. The Sub-Committee agreed that quantities per packaging should be harmonized and that the expert from the United States of America would submit a proposal based on informal document INF.8.

Document: ST/SG/AC.10/C.3/1999/17 (United States of America)

66. The proposal concerning the transport of nitrocellulose membrane filters (UN 3270) in limited quantities was adopted (see annex 2).

Document: ST/SG/AC.10/C.3/1999/38 (Japan)

67. The proposal to bring the provisions on self-reactive substances into line with the provisions on organic peroxides was adopted (see annex 2).

Packagings

Document: ST/SG/AC.10/C.3/1999/9 (South Africa)

68. The expert from South Africa said that she would submit a revised proposal at the following session.

Document: ST/SG/AC.10/C.3/1999/12 (ICAO)

69. The Sub-Committee noted that ICAO has introduced additional restrictions into its Technical Instructions concerning the use of salvage packagings. The Sub-Committee felt that it was not necessary to amend the Model Regulations, as such restrictions need not be considered for the other modes of transport.

Document: ST/SG/AC.10/C.3/1999/13 (ICAO)

Informal document: INF.35 (Secretariat)

70. Taking account of the proposal by ICAO, the Sub-Committee decided to indicate that the various markings for packagings should be clearly separated in order to make them easily identifiable (see annex 2).

"W" marks for large packagings

Document: ST/SG/AC.10/C.3/1999/20 (United Kingdom)

71. The proposal to use the "W" mark for "equivalent" large packagings by analogy with the permitted practice for packagings and IBCs was adopted (see annex 2).

Minimum thickness of drums

Document: ST/SG/AC.10/C.3/1999/22 (Spain)

Informal documents: INF.17 (SEFEL)
INF.34 (ICDM)

72. Following the accidents reported by ICAO and IATA involving thin-walled steel drums meeting the test requirements of the Model Regulations, and noting that commercial competition was encouraging the packaging industry to manufacture increasingly thin drums whose resistance to perforation and ability to withstand transport conditions in general, especially when reused, did

not appear to be satisfactory, the expert from Spain proposed specifying a minimum wall thickness for steel drums.

73. Several delegations confirmed that there were problems with such thin drums and expressed concern about the safety problems that would arise if the trend to reduce wall thicknesses were to persist. Other delegations were not convinced that a problem existed, at least with regard to drums certified as meeting the test criteria.

74. Opinions were in any event divided on what solution to propose. Prescribing a minimum wall thickness would run counter to technological progress, since thin drums could be manufactured to withstand unfavourable transport conditions. Some experts therefore expressed a preference for keeping the system of performance tests, if necessary adding further tests. Other experts requested an improvement of the Spanish proposal on minimum thickness to take into account principally reusable drums.

75. The expert from the United States of America recalled that in the past he had proposed some additional tests (penetration test and vibration test) but they had not been adopted. He further pointed out that the competent authorities had the responsibility to ensure, through inspections and possible sanctions, that packagings certified on behalf of Governments actually met the requirements in Chapter 6.1.

76. It was suggested that information on actual incidents or accidents should be collected and that experts from countries not satisfied with the quality of the testing system should make specific proposals on how to improve it, bearing in mind that a revised Spanish proposal would be presented to the next session.

Deletion of the specific requirement concerning pressure-relief devices for rigid plastics IBCs and composite IBCs with plastics inner receptacles

Document: ST/SG/AC.10/C.3/1999/28 (ICPP)

77. Several experts said that they were unconvinced of the rationale for the proposal. Others felt that pressure-relief devices were not useful because the IBCs in question were deformable, that there was consequently no risk of bursting and that the pressure relief devices would be more likely to cause safety problems in practice. The proposal was adopted (see annex 2).

Vapour pressure limitations for liquids transported in IBCs

Document: ST/SG/AC.10/C.3/1999/32 (ICIBCA)

78. The proposal not to impose vapour pressure limitations in the use of IBCs for transporting liquids was not adopted. The majority of the experts felt that IBCs were not built in accordance with a code for pressurized receptacles and that they were therefore not an appropriate means of carrying substances with a high vapour pressure.

Editorial changes to Chapter 6.5

Document: ST/SG/AC.10/C.3/1999/33 (ICIBCA)

79. The changes had been proposed to take account of the work on standardization currently being performed by the European Committee for Standardization (CEN) concerning packagings and IBCs. However, as some substantive changes had inadvertently been introduced in the text, the ICIBCA representative said that he would submit a revised proposal.

Reconditioned packagings

Document: ST/SG/AC.10/C.3/1999/42 (Italy)

Informal documents: INF.6 (ICCR)
INF.29 (Italy)
INF.36 (Italy)

80. The Sub-Committee agreed, after a discussion of the proposals, to make some changes to paragraphs 6.1.1.4, 6.1.3.2 and 6.1.3.4 (i) (see annex 2).

Unpackaged articles

Informal document: INF.7 (United Kingdom)

81. The expert from the United Kingdom suggested that the competent authorities might approve the carriage of certain large robust, empty, uncleaned and unpackaged articles. The proposal, inter alia, included flexible fuel tanks, as used for the storage of fuel on building sites or for military operations.

82. Several experts welcomed the proposal. Some said, however, that they would like the proposed text to be more explicit. A few experts felt that the proposal should be restricted to Class 3. The expert from the United Kingdom indicated that he would submit a formal proposal at the next session.

Combination IBCs

Informal document: INF.33 (China)

83. The expert from China asked how "combination" IBCs, i.e. flexible IBCs used as outer packagings for several inner packagings, should be treated and presented a draft proposal of amendment to the test requirements for such IBCs.

84. The Sub-Committee stated that IBCs were not normally intended for use as combination packagings. If the IBCs contained inner packagings meeting the requirements of Chapter 6.1, they should be considered as overpacks. If the inner packagings did not fall under Chapter 6.1, the provisions of Chapter 6.6 for large packagings should be applied.

Infectious substances

Diagnostic specimens

Documents: ST/SG/AC.10/1998/47 (Germany)
ST/SG/AC.10/1998/48 (Germany)

Informal documents: INF.24 (United Kingdom)
INF.28 (Germany)

85. The Sub-Committee agreed that the current requirements were difficult to apply in practice for consignments of diagnostic specimens by doctors, often through the postal system, and that they should be simplified so that doctors and analytical laboratories would be able to comply with them.

86. Several experts said that in principle they favoured the approach suggested by the United Kingdom, but since most delegations had not had time to study the informal documents in detail, the experts from Germany and the United Kingdom were requested to cooperate in submitting a new proposal, in consultation also with the experts from WHO.

Hospital waste

Informal document: INF.19 (WHO)

87. The WHO representative emphasized the difficulties of applying the requirements for Division 6.2 to hospital waste and presented a draft proposal being prepared by WHO for a more pragmatic approach.

88. The experts were invited to transmit their comments on the draft to her */ so that a formal proposal could be submitted at the next session.

Toxic by inhalation substances

Document: ST/SG/AC.10/C.3/1999/49 (United States of America)

Informal documents: INF.3 (EIGA)
INF.18 (CEFIC)

89. The expert from the United States of America, recalling that the Committee had decided to prescribe packing instructions P601 or P602 for certain very toxic by inhalation substances, proposed that those instructions should be applicable to all toxic by inhalation substances with the same degree of hazard and that a ratio of volatility to the LC_{50} criterion should be established to assign the substances to instructions P601 and P602.

---

*/ *Ms. A. Pruess, E-mail: pruessa@who.ch.*

90. That proposal was supported by several experts, who considered that toxicity by inhalation (Packing Group I) was one of the major risks for transport and that such a risk justified special packing measures.

91. Other experts felt, on the other hand, that packing instructions P601and P602 had been drawn up for substances known from experience to present a very high risk, but that there was no reason to apply them systematically to all substances presenting a danger of toxicity by inhalation in Group I, for which the packagings currently permitted were found to be satisfactory. They feared, moreover, that the United States of America proposal might entail de facto the creation of a new classification criterion.

92. The expert from France said that the United States of America proposal would involve much stricter packing instructions for many substances without proper justification since, in his view, the risk analysis made by the United States of America was debatable. He regretted that the compromise solutions adopted by the Committee for instructions P601 and P602 entailed a significant reduction, at least in Europe, in the level of safety for higher-risk substances because, instead of pressurized receptacles tested at 10 bars, use could now be made of less expensive drums tested at only 3 bars. He felt that it was illogical to try to develop a rational approach for the assignment of instructions P601 and P602 when each of those instructions offered the possibility of using packagings with very different safety levels.

93. The expert from Belgium questioned the need for having two packing instructions for toxic by inhalation substances.

94. The proposal from the United States of America, having been put to the vote, was not adopted.

95. The expert from the United States of America asked whether, in view of the discussion and the vote, the Sub-Committee still wished him to pursue work on developing a rational approach to the assignment of instructions P601 and P602. A majority of the members of the Sub-Committee said that they were in favour of the work being continued, and interested experts were requested to provide their comments to the expert from the United States of America.

Segregation of dangerous goods

Documents: ST/SG/AC.10/C.3/1997/89 (United States of America)
ST/SG/AC.10/C.3/1999/43 (Netherlands)

96. Some experts shared the opinion of the Netherlands that the segregation of dangerous goods should rather be envisaged mode by mode since the objectives of the pertinent requirements differed according to the mode.

97. It was, however, recalled that the Committee had decided to study the question and other experts considered that harmonization would be useful, at least for multimodal transport operations, particularly in containers.

98. The expert from Germany said that an international working group would meet in his country to revise the requirements of the IMDG Code concerning the segregation of packed substances in cargo transport units and segregation between cargo transport units, that this work would be submitted to IMO in February 2000 and that a proposal concerning principles of segregation appropriate for the Model Regulations could be submitted, possibly in the form of an informal document, at the December 1999 session or at latest in official form at the July 2000 session.

99. The Sub-Committee agreed to reconsider the matter once the expert from Germany submitted his proposal.

Miscellaneous proposals

Tests for lighters

Informal document: INF.32 (China)

100. The Sub-Committee noted China's wish to add a new test to section 6.2.3 for lighters and lighter refills. Some experts endorsed the concept contained in the informal document. The Sub-Committee invited the expert from China to make an official proposal with data and examples for the next session.

Document: ST/SG/AC.10/C.3/1999/15 (ICAO)

Informal document: INF.39

101. ICAO's proposals were considered by a working group the conclusions of which were set out in document INF.39. The texts adopted by the Sub-Committee are reproduced in annex 2.

Organic peroxides/Self-reactive substances

Documents: ST/SG/AC.10/C.3/1998/56 (Finland)
ST/SG/AC.10/1998/56 (Finland)

102. The Sub-Committee noted that the observer from Finland and CEFIC would submit a new joint proposal on the carriage of peroxyacetic acid in IBCs and tanks.

Documents: ST/SG/AC.10/1998/13 (CEFIC)
ST/SG/AC.10/C.3/1999/21 (CEFIC)

103. The proposal to add four substances to the list in 2.4.2.3.2.4 was adopted with some drafting changes (see annex 2).

104. The expert from the United Kingdom said that he hoped that the detailed lists of organic peroxides and self-reactive substances would be removed from the Model Regulations in future since it was difficult to keep them up to date and the industry was able to classify these products in accordance with the criteria. The expert from Belgium considered on the contrary that these lists were useful. They made it possible for the industry in different countries to avoid classifying formulations already classified by the Committee.

Explosives

Document: ST/SG/AC.10/C.3/1999/4 (Sweden)

105. The expert from Sweden proposed the inclusion of a new entry in Division 1.4, compatibility group S, for air bag inflators, air bag modules and seat-belt pretensioners, pyrotechnic because he considered that those classified in Class 9 (UN 3268) should in fact be classified as 1.4S for storage and handling purposes.

106. It was recalled that classification of such articles in Class 9 was a compromise resulting from long discussions on the actual danger they presented when carried.

107. The expert from the United States of America noted that over 300 million such items had already been transported safely without any reported incidents. He felt that further adjustment to these requirements for those items would serve to frustrate shipments without benefit to transport safety.

108. The expert from Norway objected to the argument put forward by the expert from the United States of America on the grounds that the fact that accidents did not occur was not relevant when discussing classification.

109. Certain experts supported the proposal by Sweden; some of them considered that the entry in Class 9 should be deleted because it should not be allowed to classify the same article under an entry in Class 9 or under another entry in Division 1.4, compatibility group S.

110. Other experts considered that there was no need to reconsider the existing classification as current experience of transport under the conditions of Class 9 did not reveal any kind of safety problem. They were also opposed to the possibility of classification of the same articles under two different classes and they considered that deletion of the existing entry in Class 9 would require a written proposal.

111. The proposal, having been put to the vote, was not adopted.

Document: ST/SG/AC.10/C.3/1999/5 (Sweden)

Informal document : INF.37 (Sweden)

112. The proposal of amending special provision 235 as revised in INF.37 was adopted (see annex 2).

Document: ST/SG/AC.10/C.3/1999/19 (Norway)

113. The proposal, concerning the addition of provisions on mixed transport of goods of Class 1 with other dangerous goods in Chapter 7.1 was adopted (see annex 2).

114. An oral proposal by the expert from the United States of America to allow goods of Class 9 to be transported with goods of Class 1 was not adopted on the grounds that, due to the variety of miscellaneous goods which can be classified in Class 9, it might be necessary to consider mixed transport on the case by case basis.

Document: ST/SG/AC.10/C.3/1999/45 (United States of America)

115. The proposal to allow additional packagings under certain Class 1 packing instructions was adopted, except for fibre drums (1G) and plywood drums (1D) under P144 because this instruction was applicable to water-activated contrivances (see annex 2).

DRAFT AMENDMENTS TO THE MANUAL OF TESTS AND CRITERIA

Document: ST/SG/AC.10/C.3/1999/2 (Russian Federation)

116. At the request of the expert from the Russian Federation, discussion of this document was deferred to the July 2000 session.

Document: ST/SG/AC.10/C.3/1999/31 (Germany/Canada)

Informal document: INF.14 (United States of America)

117. Certain experts supported the proposal to extend the scope of series 6 type (a) test because they considered that the 6 (c) test is not suitable to determine how well effects from accidental functioning of a packaged substance or article are confined within the package.

118. Other experts recalled that it took four years to revise the test prescription and the criteria for the 6 (c) test and considered that the specific criteria for classifying products to Division 1.4, including compatibility group S, resulting from this work were adequate and did not need further refinement.

119. The proposal, having been put to the vote, was not adopted.

Test results concerning test conditions of testing methods for oxidizing solids

Informal document: INF.12 (Japan)

120. The Sub-Committee took note of the information provided by the expert from Japan.

GLOBAL HARMONIZATION OF SYSTEMS OF CLASSIFICATION AND LABELLING OF CHEMICALS

Hazards to the environment

Document: ST/SG/AC.10/C.3/1999/27 (United Kingdom)

Informal document: INF.27 (Germany)

121. The expert from the United Kingdom presented a proposal for a Chapter 2.9 on the classification of substances dangerous to the environment and consequential amendments to the Model Regulations. The proposal was based on the classification criteria for substances hazardous to the aquatic environment developed by OECD in the context of the global harmonization of systems of classification and labelling of chemicals.

122. Most experts supported the principle of the proposal, and the Sub-Committee agreed that the criteria to be retained for transport purposes were those described in paragraph 2.9.2.3.1 of the proposed Chapter 2.9, although the expert from Germany considered that some chronic effects (box 7 in the OECD proposal) should not be taken into account.

123. Several experts considered that the text of this Chapter 2.9 should be simplified and some details of an explanatory nature could be deleted or replaced by a reference to the OECD Guidance document (still under preparation).

124. Several experts considered that it would not be appropriate to introduce new provisions on the carriage of substances hazardous to the environment in the Model Regulations as long as the work on classification of mixtures and on harmonized labelling has not been completed; others believed on the contrary that provisions concerning substances could already be introduced and supplemented at a later stage.

125. Several experts expressed the view that the introduction of criteria for classification would not suffice because this would oblige all chemical producers to classify all substances and mixtures they offer for transport; they considered that a list of substances known to meet the criteria should be prepared and made available so that the future new provisions might be complied with more easily without unnecessary testing and re-testing.

126. Other experts preferred to leave the responsibility of classification to the industry, including for substances listed in Chapter 3.2, because elaboration and up-dating of such lists would be a serious burden for the Committee.

127. The expert from China said that dangerous goods were carried in large quantities by inland waterways, and that the classification criteria for aquatic pollution should be more severe than those existing for maritime pollution because of the risk of pollution of drinking water.

128. With respect to consequential amendments, a member of the secretariat recalled that, while harmonization of classification criteria was necessary for harmonization but might not be sufficient in practice, harmonization of transport conditions (labelling, marking, packing, etc.) was as important for multimodal transport. He recalled that the essential requirements for maritime transport of such substances were contained in Annex III of the MARPOL Convention, which required that the marine pollution potential of such substances be identified by a mark on packages and by a specific mention in the transport document, and that the location of such substances on board a ship be identified in the dangerous goods manifest or a stowage plan. He thought that if harmonization had to be achieved, this should be taken into account in the Model Regulations.

129. Considering the obligation of all United Nations bodies and specialized agencies to support the globally harmonized system, the observer from Bahamas considered that Annex III of MARPOL could be amended as necessary if there were contradictions with the Model Regulations, in this respect.

130. It was agreed to keep document ST/SG/AC.10/C.3/1999/27 on the agenda of the next session and to invite experts to provide comments or suggested changes as deemed necessary in writing. The expert from the United Kingdom would consider the need to present a revised version of the document for the next session.

Document: ST/SG/AC.10/C.3/1999/46 (United States of America)

131. The expert from the United States of America said that in the OECD proposal for harmonized criteria, the United States of America delegation had proposed an additional criterion of toxicity level of 100 ppm for the transport of large volumes (more than 3000 litres) and this had been included in the OECD proposal. Therefore, he was considering a proposal to add this criterion to the United Kingdom proposal and was interested in the views of the Sub-Committee.

132. Certain experts considered that this criterion in Annex II of the MARPOL Convention existed mainly in the context of operational (and not accidental) discharges of substances from chemical tankers into the sea, and was not applicable to maritime carriage in bulk in tank-containers or tank-vehicles which was considered as carriage in packaged form subject to Annex III of MARPOL.

133. Although some experts recognized that the quantity carried was a factor of risk, there was not much support for this additional criterion which is not presently specified in international transport regulations applicable to tank-containers and tank-vehicles.

Classification of mixtures

Informal document: INF.31 (Chairman)

134. The Sub-Committee took note of the information provided by the representative of OECD on the work of his organization in that respect.

135. With respect to the questions posed by the Chairman in INF.31, the majority of the Sub-Committee was in favour of maintaining a calculation method for acute toxicity of mixtures when data on active substances was available. Other approaches such as cut-off values could also be accepted. The general view was that the methods used for classification of mixtures should also be applicable to the classification of wastes. For mixtures containing environmentally hazardous substances, cut-off values (e.g. 1% or 10% as in the IMDG Code) seemed preferable because calculation methods with criteria such as log Po/w might be too complicated in practice.

Hazard communication

Informal document: INF.23 (Chairman)

136. The Sub-Committee was informed of the outcome of the session of the ILO Working Group on Hazard Communication held in Dublin from 21-23 June 1999.

137. With regard to the questions raised by the Chairman, most experts considered that it was premature to express any view because there was not yet any concrete proposal from the ILO Working Group.

138. The Sub-Committee considered that, in principle, transport experts participating in the ILO Working Group session should explain the existing transport provision and promote the benefit of using these as a basis of the harmonized system because they have already been successfully used worldwide for many years. Any change to the existing transport labelling system proposed by the ILO Working Group would be considered as appropriate.

Co-ordinating Group for the Harmonization of Chemical Classification Systems (Dublin, 21-22 June 1999)

Informal document : INF.30 (Chairman)

139. The Sub-Committee noted the information provided by the Chairman.

140. For the phased implementation of the globally harmonized system, the Sub-Committee noted that certain delegations of the Co-ordinating Group would prefer to wait until the work on global harmonization has been fully completed before starting implementing the system as a whole package. However, such an approach for transport regulations would mean a complete revision of all downstream requirements at the same time, and this extensive work might require a long period time. Therefore, it was considered preferable to start implementing elements of the system already available as soon as possible, and to introduce at least the new criteria for classification of new substances, even though is was recognized that re-classification of existing substances might need more time and coordination.

141. Several experts were in favour of developing a database containing relevant data on substances to be classified. Other experts considered that this work would require too many resources. The question as to whether such a database would contain an internationally recognized list of classified substances or only various relevant data permitting classification of substances would have to be further debated if there were an agreement for such a database. The expert from Canada suggested that the development of such a database be left to commercial companies currently involved in this work.

OTHER BUSINESS

Arrangements for the next session

142. The Sub-Committee noted that the next session has been scheduled for 6-17 December 1999 but could be shortened by the secretariat (6-15 December or even 6-10 December) depending on the number of proposals received by the deadline (17 September 1999).

143. The agenda items will be the same as for this session except that item 5(j) (explosives) will be deleted and that there should be a UN/ILO Joint Working Group session on the flammability of aerosols.

144. The following documents were carried forward to the next session:
ST/SG/AC.10/1998/3, -/1998/5, -/1998/6;
ST/SG/AC.10/C.3/1998/20;
ST/SG/AC.10/C.3/1999/3, -/1999/27, -/1999/30

145. Document ST/SG/AC.10/C.3/1999/2 was carried forward to the July 2000 session.

ADOPTION OF THE REPORT

146. The Sub-Committee adopted the report on its sixteenth session and the annexes thereto.

INDIANA UNIVERSITY LIBRARY
DEC 16 1999
GOVERNMENT PUBLICATIONS DEPT